

REMARKS

In the subject Office Action, the examiner made the prior restriction requirement final and rejected the elected claims under the judicially created doctrine of obviousness-type double patenting, under 35 USC 102(b) and under 35 USC 103(a). Additionally, Claim 4 was rejected for indefiniteness under 35 USC 112, second paragraph. Applicants request reconsideration of their application in view of this response, which includes a terminal disclaimer, amended and new claims, and argumentation supporting the patentability of the pending claims.

The Restriction Requirement

Applicants have entered new dependent Claims 8-9 including the limitations of withdrawn Claims 5-6, as suggested by the examiner.

The Rejection for Obviousness-Type Double Patenting

Delphi Technologies, Inc., as the assignee of the entire interest of both the present patent application and the co-pending and co-assigned U.S. Patent Application Serial No. 10/041,408, hereby disclaims the terminal portion of any patent issuing from the present patent application which would extend beyond the expiration date of any patent issuing from U.S. Patent Application Serial No. 10/041,408. Any patent granted on the present application shall be enforceable only for and during such period that it is commonly owned with U.S. Patent Application Serial No. 10/041,408. Accordingly, Applicants respectfully request that the rejection of Claims 1-4 under the judicially created doctrine of obviousness-type double patenting be withdrawn. Charge the \$110 statutory disclaimer fee to the Deposit Account No. 50-0831 of Delphi Technologies Inc. Finally, Applicants are not aware of any other related patent application.

The Rejection Under 35 USC 112, Second Paragraph

Claim 4 has been amended herein to eliminate the ambiguity noted by the examiner. Accordingly, Applicants respectfully request that the rejection of Claim 4 under 35 USC 112, second paragraph, be withdrawn.

The Rejection Under 35 USC 102(b) and 35 USC 103(a)

The rejection of Claims 1-4 under 35 USC 102(b), or alternatively 35 USC 103(a), is respectfully traversed. Specifically, Applicants submit that the method of Claims 1-4 is neither anticipated by, nor obvious in view of, Yoshioka '574. As noted in Applicants' specification, Yoshioka discloses a control wherein movement of the temperature lever in the cold-to-medium portion of the temperature control range changes the capacity of the refrigerant compressor while an air mixing device is maintained in the full-cold position; and movement of the temperature lever in the medium-to-hot portion of the temperature control range changes the position of the air mixing device to heat the discharge air. Thus, the position of the temperature lever determines whether AC compressor operation is enabled or disabled, in addition to positioning the re-heat mechanism and controlling compressor capacity. This is a peculiar approach because in most production air conditioning systems, the AC enable/disable decision is generated independent of the temperature lever. Providing independent AC enable/disable control allows the vehicle occupants to select whether AC is desired, and additionally allows an engine or HVAC controller to disable AC compressor operation under specified operating conditions such as when the ambient temperature is low or the engine load is high. If AC compressor operation in Yoshioka's system is independently disabled as required in rejected Claim 1, movement of the temperature lever in the cold-to-medium portion of the temperature control range will produce no change in the discharge air temperature. Moreover, if Yoshioka's dehumidification button 23 is depressed to activate AC while the temperature selector is between medium and hot, the air discharge temperature will become colder even though the setting of the temperature selector is unchanged.

In contrast to Yoshioka, Applicants have invented a way of achieving energy efficient operation of an air conditioning system having a conventional temperature selector for setting the desired discharge air temperature and a separate device for enabling and disabling AC. If AC is enabled by the AC enable/disable device, the

compressor capacity and re-heat functions are controlled according to a first function of temperature selector setting for producing the desired discharge air temperature. If AC is disabled by the AC enable/disable device, the re-heat function is controlled according to a second function of temperature selector setting for producing discharge air heating in proportion to the desired discharge air temperature. This means that if the driver or some other system such as the engine controller disables AC compressor operation, no adjustment of the temperature lever is needed, which is definitely not the case in Yoshioka. If AC is enabled by the AC enable/disable device, the compressor capacity and re-heat function are controlled according to a first function of temperature selector setting for producing a discharge air temperature corresponding to the desired discharge air temperature. This means that if AC operation is independently enabled, with a dehumidification input for example, no adjustment of the temperature lever is needed, which as described above, is not the case with Yoshioka.

Applicants have amended Claims 1-4 to more clearly distinguish their method over that described by Yoshioka. Claim 1 as amended herein recites:

1. A method of operation for a vehicle air conditioning system including a refrigerant compressor, an AC enable/disable device for enabling and disabling air conditioning, an evaporator for cooling inlet air when air conditioning is enabled by said AC enable/disable device, a temperature control mechanism positioned to control re-heating of air exiting the evaporator, and a driver-manipulated temperature selector for setting a desired discharge air temperature, the method comprising the steps of:

- enabling and disabling said refrigerant compressor in accordance with said AC enable/disable device, regardless of the setting of said temperature selector;

when air conditioning is enabled by said AC enable/disable device, regulating the capacity of said compressor and the position of said temperature control mechanism as a first function of the temperature selector setting for producing a discharge air temperature corresponding to said desired discharge air temperature; and

when air conditioning is disabled by said AC enable/disable device, regulating the position of said temperature control mechanism as

a second function of the temperature selector setting for producing discharge air heating in proportion said desired discharge air temperature.

In view of the above, it will be seen that amended Claim 1 now clearly distinguishes over Yoshioka. Nothing in Yoshioka teaches or suggests controlling the position of the temperature control mechanism as one of two different functions of temperature selector setting, depending on whether AC is enabled or disabled by an AC enable/disable device. This difference is significant as demonstrated above because it results in seamless transitions between operation with the AC compressor enabled and disabled, requiring no adjustment of the temperature selector to compensate for the addition or loss of AC compressor operation.

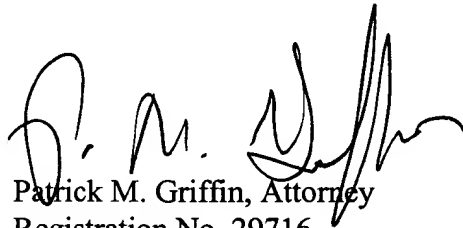
Dependent Claims 2-4 and 8-9 are patentable over Yoshioka at least by virtue of such dependency. Additionally, Claim 2 recites that the first function of temperature selector setting provides a desired temperature of air exiting the evaporator, and that the compressor capacity is regulated to achieve that temperature at the outlet of the evaporator; this certainly is neither shown nor suggested by Yoshioka, which simply sets the compressor rate based on the temperature selector setting. Claim 3 recites entry conditions for utilizing the first function of temperature selector setting, and recites that temperature control mechanism position is controlled according to the second function of temperature selector setting if the entry conditions are not met; this also is neither shown

nor suggested by Yoshioka. Claim 4 recites a specific entry condition, which also is neither shown nor suggested by Yoshioka. Claim 8 recites one control of compressor capacity and temperature control mechanism position when AC is initially enabled, and a different control (i.e., the first function of temperature selector setting) when the system has achieved full cooling capacity; this certainly is neither shown nor suggested by Yoshioka. Claim 9 additionally recites a method of detecting full cooling capacity, which also is neither shown nor suggested by Yoshioka.

Summary

As demonstrated above, the subject matter of Claims 1-4 and 8-9 is neither shown nor suggested Yoshioka. Accordingly, Applicants request that the rejection under 35 USC 102(b) and 35 USC 103(a) be withdrawn. Claims 1-4 and 8-9 are believed to be in condition for allowance, and such allowance is therefore respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'P. M. Griffin', is written over the typed name.

Patrick M. Griffin, Attorney  
Registration No. 29716  
Telephone: (248) 813-1215